

DISCONTINUOUS DEODORISATION OF AQS. POLYMER DISPERSIONS.

GE. 1.248,943 clg. (Non-Con) 20.7.65. (GE) as B 82,909 Pub. 31.8.67. Badische Anilin.

NEW

Volatile impurities are removed from aqs. polymer dispersions by passing steam into boiling dispersion, taking resultant foam-steam mixt. and separating.

ADVANTAGES

Simple discontinuous method requiring no costly plant. Economic use of steam. Effective deodorisation.

USES

Esp. in conjunction with batch polymerisation.

SPECIFICALLY

Dispersions pref. have surface tension ≤ 40 dyne/cm. and may be aqs. dispersions of (co)polymers from vinyl chloride, vinyl esters, (meth)acrylic esters, styrene, butadiene, polymers con-

taining SO_3H and/or COOH and/or CONH_2 groups or dispersions containing sulph(on)ated emulsifiers. Volatiles include excess monomer, low-mol. by-products, emulsifiers and other auxiliaries. Foam-steam mixt. is broken at flow rates > 100 m/sec. by rapidly diminishing pressure by $\sim 100 - 350$ torr. $< 0.2\%$, often $< 0.1\%$ volatiles remain.

EXAMPLE

800 kg. 50% aqs. dispersion of 50% n-butyl acrylate/50% styrene copolymer were heated to 62°C in 1 m^3 vessel, which was evacuated to 30 torr. so that contents boiled. Foam and steam formed were pushed up rising tube, passed through constricted nozzle-like end, where foam was broken, and into separator. Broken foam was recycled. 130 kg/hr. steam were injected through bottom of

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vessel, keeping contents at 69°C . Pressure loss in rising tube and nozzle was < 180 torr. After 3 hr., residual monomer content had fallen from 1.65 to 0.018% (based on solids in dispersion).

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